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10/734,618

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Raymond C. Kurzweil

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EXAMINER

BEHNCKE, CHRISTINE M

ART UNIT

PAPER NUMBER

3661

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/734,618

Applicant(s)

KURZWEIL, RAYMOND C.

Examiner

Christine M. Behncke

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. This office action is in response to the application filed 12 December 2003, in which claims 1-25 were presented for examination.

#### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 2, 13, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Choy et al., US 6,695,770, in view of Yee et al., US 6,016,385, and in further view of Boulanger et al., US 6,583,808.

(Claims 1 and 15) Choy et al. discloses a virtual reality encounter system comprising: a mannequin coupled to a computer system wherein the mannequin is fitted with appropriate sensors that are connected to the computer system to transmit to another location and user device over a network (column 3, lines 23-25), a headset, to display morphing animations and animated textures on the appropriate avatar (column

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9, line 65-column 10, line 6). Choy does not disclose the use of a camera coupled to the mannequin. However, Yee et al. teaches a robot system wherein an operator controls the robot and receives sensory information from the robot, including a camera coupled to the robot for receiving a video image (Figure 3, cameras 22), the camera sending the video image to a communication network (Figure 1), a processor for morphing the video image (column 5, lines 11-40), and the user having a set of goggles to display a morphed video image to the user (column 5, lines 11-37). Further, Boulanger et al. teaches that it is well known in the art of video processing to create a stereo pair of video images separated by a nominal interocular spacing of a participant, or to morph a multi-view transformation for a respective participant's view to create a more realistic virtual meeting (column 4, line 64-column 5, line 6).

**(Claims 2 and 16)** Choy et al. further discloses wherein a processor overlays a virtual environment over one or more portions of the video image to form a virtual scene (column 8, lines 47-58 and column 9, line 65-column 10, line 6). Further, Boulanger et al. teaches video processing wherein a captured video image is transformed with the background to form a virtual scene (column 5, lines 29-64).

**(Claim 13)** Further Yee et al. teaches wherein the headset of the user comprises a receiver to receive the video signals (column 5, lines 11-37).

It would have been obvious to one of ordinary skill in the computer and robotic arts to combine the mannequin with the teachings of Yee et al. because as Yee et al. suggests the placement of cameras that are analogous to the human form duplicates the motion of the operator and the normal viewing of the operator of an environment,

such as three-dimensions, increases the user friendliness of the robot to while interacting with the general public (column 4, line 52-column 5, line 49).

***Claim Rejections - 35 USC § 103***

3. Claims 3-7, 11, 12, 17-20, and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Choy et al. in view of Yee et al. and Boulanger et al. as applied to claims 2 and 16 above, and further in view of Dundon, US 7,046,151.

(Claims 3 and 17) Choy et al. further discloses wherein the mannequin is a humanoid robot having tactile sensors positioned along the exterior of the robot (column 2, lines 4-32), the sensors sending tactile signals to a communications network (column 8, lines 9-15). Choy et al. further discloses wherein the user wears a body suit, but does not disclose wherein the suit comprises tactile actuators. However, Dundon teaches an interactive body suit that permits users to interact over a network whereby the garment includes tactile actuators, the tactile actuators receiving tactile signals from the network (abstract). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the method and system of Choy et al. with the teachings of Dundon because, as Dundon suggests, an interactive body suit that covers a user with embedded oscillating motors provides a more realistic and interactive sensory environment when providing force feedback sense of touch (column 29, lines 36-55).

(Claims 4 and 18) Choy et al. further discloses motion sensors positioned throughout the body suit (column 5, lines 46-67), the motion sensors sending motion signals corresponding to movements of each sensor relative to a reference point (), the motion signals transmitted to the communications network (column 5, lines 46-67); and

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a humanoid robot, receiving, from the communications network, the motion signals from the motion sensors (column 9, line 65-column 10, line 32), the motion signals from the motion sensors causing a movement of the robot that is correlated to a movement of the body suit (column 3, lines 11-25, column 6, lines 1-49, and column 7, lines 20-23).

**(Claims 5 and 19)** Choy et al. further discloses wherein the robot includes motion actuators corresponding to the motion sensors, the motion actuators causing the robot to move (column 7, lines 20-23, column 8, lines 1-15).

**(Claim 6)** Choy et al. further discloses wherein the robot has life-like features, the robot comprising: a body (Figure 2). Choy et al. does not disclose a microphone. However, Yee et al. teaches a robot having life-like features including a body (Figure 3), and a microphone coupled to the body, the microphone for sending audio signals to the communications network (microphones 48).

**(Claims 7 and 20)** Yee et al. further teaches wherein the headset of the user includes a transducer to render audio signals received from the microphone (earphones 19, Figure 4).

**(Claims 11 and 22)** Yee et al. further teaches wherein the body includes an eye socket and the camera is positioned in the eye socket (column 5, lines 11-37).

**(Claims 12 and 23)** Yee et al. further teaches wherein the body includes an ear canal and the microphone is positioned within the ear canal (column 4, line 52-column 5, line 1).

**(Claim 24)** Further Yee et al. teaches wherein the headset of the user comprises a receiver to receive the video signals (column 5, lines 11-37).

It would have been obvious to one of ordinary skill in the art to combine the virtual reality system of Choy et al. with the teachings of Yee et al. because as Yee et al. suggests, the virtual interface of the robot, camera in eye socket and microphone in ears, is intended to make the robot more friendly in appearance to a second user, and the microphones in the ears add the benefit of being able to relay to the user a sense of direction of a sound and the cameras in the left and right eye sockets provide the user with information in a three dimensional format similar to how a human would normally view an environment (Column 4, line 52-Column 5, line 49).

***Claim Rejections - 35 USC § 103***

4. Claims 8, 9, 10 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Choy et al. in view of Yee et al., Boulanger et al., and Dundon as applied to claims 7 and 20 above, and further in view of Abbasi, US 6,786,863.

(Claims 8 and 21) Choy et al. in view of Yee et al. describes the robot is at a first location and the set of goggles is at a second location (column 9, line 65-column 11, line 17); a second humanoid robot in the second location having life-like features and rendering acquired video and audio signals received from a communications network into a user headset (column 9, line 65-column 11, line 17). Choy et al. does not disclose sending audio and video signals from a second microphone and camera coupled to a second robot. However, Abbasi teaches a remote physical encounter system and method comprising a second mechanical surrogate with external sensory devices including a second camera and a second microphone and sending the signals to a communications network (Figure 1).

(**Claim 10**) Abbasi further teaches wherein the communications network comprises an interface having one or more channels for receiving the audio signals from the microphone and receiving the video signals from the camera (Figure 1); and Choy et al. discloses sending audio and visual signals to the headset of the user (Figure 1 and column 3, line 10-column 4, line 55).

It would have been obvious to one of ordinary skill in the art, at the time of the invention, to combine the system of Choy et al. with the teachings of Abbasi because teaches that the use of sight and sound is important for easy communication and as Choy et al. suggests the combination of touch, audio and visual stimulation is a powerful and effective means of communication (Column 1, lines 19-22).

(**Claim 9**) Choy et al. further discloses wherein the communications network includes a first communication gateway in the first location and a second communication gateway in the second location (column 9, line 65-column 10, line 6), the second processor connected to the first processor via a network (column 7, line 64-column 8, line 38 and column 11, lines 1-12).

(**Claims 14 and 25**) Choy et al. further discloses wherein the robot comprises a transmitter to wirelessly send the audio signals, tactile signals, motion signals and the video signals to the communications network (column 8, line 64-column 9, line 39).

### ***Conclusion***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christine M. Behncke whose telephone number is (571)




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272-8103. The examiner can normally be reached on Monday - Friday 8:30 AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas G. Black can be reached on (571) 272-6956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CMB

  
THOMAS BLACK  
SUPERVISORY PATENT EXAMINER